

Wallenpaupack Area School District

COURSE: Science - Chemistry in the Community (ChemCom)

GRADE LEVEL: Grades 10-12

Length of Course: 90 Days / 84 Minutes Per Day

Text: American Chemical Society—Chemistry in the Community (CHEMCOM)

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Course Description:

Chemistry in the community is the study of the chemicals in our everyday world. This course will include the topics of water, acids and bases, chemical safety, as well as environmental health issues.

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Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Unifying Themes

Grade Level: GRADES
10-12

PA Standard: 3.1.10A
3.1.10C

Topics: Water: exploring solutions	Skills: Identify the function of subsystems within a larger system Describe the interrelationships among input, processes, outputs, feedback and control in specific systems Apply the universal systems model to illustrate specific problems Examine and describe recurring patterns that form the basis of biological classification, chemical periodicity, geological order and astronomical order
Activities: Function and operation of the hydrologic cycle Use of the periodic table to predict physical and chemical properties Purification of water laboratory Water softening laboratory	Performance Assessments: Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Inquiry and Design

Grade Level: GRADES
10-12

PA Standard: 3.2.10.B
3.2.10.C

Topics:	Skills:
<p>Water: exploring solutions</p>	<p>Describe materials using precise quantitative and qualitative skills based on observations</p> <p>Use process skills to make inferences and predictions using collected information and to communicate using space/time relationships, defining operationally</p> <p>Generate questions about objects, organisms and/or events that can be answered through scientific investigations</p> <p>Evaluate the appropriateness of questions</p> <p>Design an investigation with adequate control and limited variable to investigate a question</p> <p>Conduct a simple experiment</p> <p>Organize experimental information using a variety of analytical methods</p> <p>Judge the significance of experimental information in answering the question</p> <p>Suggest additional steps that might be done experimentally</p>
Activities:	Performance Assessments:
<p>Solvents laboratory</p> <p>Solubility laboratory</p> <p>Water testing</p> <p>Water softening laboratory</p> <p>Activity: chemical in Your life: daily discussion item</p> <p>Chemical name :[]</p> <p>Complete attached: "Chemical in Your Life" data sheet</p>	<p>Teacher observations</p> <p>Laboratory performance</p> <p>Quizzes</p> <p>Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Physical Science, Chemistry
and Physics

Grade Level: GRADES
10-12

PA Standard: 3.4.10.A

Topics:	Skills:
<p>Water: exploring solutions</p>	<p>Know that atoms are composed of even smaller sub-atomic structures whose properties are measurable</p> <p>Explain the repeating pattern of chemical properties by using the repeating patterns of atomic structure within the periodic table</p> <p>Describe phases of matter according to the Kinetic Molecular Theory</p> <p>Describe various types of chemical reactions by applying the laws of conservation of mass and energy</p> <p>Apply knowledge of mixtures to appropriate separation techniques</p>
Activities:	Performance Assessments:
<p>Subatomic particles investigation</p> <p>Periodic table investigation</p> <p>Solubility laboratory</p> <p>Water purification laboratory</p> <p>Mixture and solution investigation</p> <p>Activity: chemical in your life: daily discussion item</p> <p>Chemical name :[]</p> <p>Complete attached: "Chemical in Your Life" data sheet</p>	<p>Teacher observations</p> <p>Laboratory performance</p> <p>Quizzes</p> <p>Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Technological Devices

Grade Level: GRADES
10-12

PA Standard: 3.7.10.B

Topics: Water: exploring solutions	Skills: Describe and use appropriate instruments to gather and analyze data Explain the need to estimate measurements within error of various instruments Apply accurate measurement knowledge to solve everyday problems
Activities: Laboratory safety investigation Various laboratory investigations Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Performance Assessments: Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Renewable and
nonrenewable resources

Grade Level: GRADES
10-12

PA Standard: 4.2.10.B

Topics: Water: exploring solutions	Skills: Describe natural occurrences that may affect the natural resources Analyze technologies that affect the use of our natural resources Evaluate the effect of consumer desires on various natural resources
Activities: Chemical effect on waterways discussion Fish kill investigation Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Performance Assessments: Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Environmental Health

Grade Level: GRADES
10-12

PA Standard: 4.3.10.A

Topics:	Skills:
Water: exploring solutions	Identify the effects on human health of air, water and soil pollution and the possible economic costs to society Explain the costs and benefits of cleaning up contaminants Explain how common household cleaning products are manufactured and how to dispose of their by-products after use
Activities:	Performance Assessments:
Household chemical investigation and discussion Water purification laboratory Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Unifying Themes

Grade Level: GRADES
10-12

PA Standard: 3.1.10.B
3.1.10.C
3.1.10.E

Topics:	Skills:
<p>Materials: structure and uses</p>	<p>Distinguish between different types of models and modeling techniques and apply their appropriate use in specific applications</p> <p>Examine the advantages of using models to demonstrate processes and outcomes</p> <p>Apply mathematical models to science and technology</p> <p>Examine and describe recurring patterns that form the basis of biological classification, chemical periodicity, geological order and astronomical order.</p> <p>Describe how fundamental science and technology concepts are used to solve practical problems</p> <p>Recognize that stable systems often involve underlying dynamic changes</p> <p>Describe the effects of error in measurements</p>
Activities:	Performance Assessments:
<p>Metal properties discussion and investigations</p> <p>Atomic numbers and properties of elements discussion and investigations</p> <p>Periodic table investigation</p> <p>Reactivity of metals laboratory</p> <p>Activity: chemical in your life: daily discussion Item</p> <p>Chemical name :[]</p> <p>Complete attached: "Chemical in Your Life" data sheet</p> <p>Classifying metals and nonmetals</p>	<p>Teacher observations</p> <p>Laboratory performance</p> <p>Quizzes</p> <p>Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Inquiry and Design

Grade Level: GRADES
10-12

PA Standard: 3.2.10.B
3.2.10.C

Topics:	Skills:
<p>Materials: structure and uses</p>	<p>Describe materials using precise quantitative and qualitative skills based on observations</p> <p>Develop appropriate scientific experiments: raising questions, formulating hypotheses, testing, controlled experiments, recognizing variables, manipulating variables, interpreting data, and producing solutions</p> <p>Generate questions about objects, organisms and/or events that can be answered through scientific investigations</p> <p>Evaluate the appropriateness of questions</p> <p>Conduct a simple experiment</p> <p>Organize experimental information using a variety of analytical methods</p> <p>Judge the significance of experimental information in answering the question</p> <p>Suggest additional steps that might be done experimentally</p>
Activities:	Performance Assessments:
<p>Reactivity of metals laboratory</p> <p>Strike it rich laboratory</p> <p>Post 1980's pennies laboratory</p> <p>Activity: chemical in your life: daily discussion Item</p> <p>Chemical name :[]</p> <p>Complete attached: "Chemical in Your Life" data sheet</p> <p>Metal plating demonstration</p>	<p>Teacher observations</p> <p>Laboratory performance</p> <p>Quizzes</p> <p>Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Physical Science, Chemistry
and Physics

Grade Level: GRADES
10-12

PA Standard: 3.4.10.A
3.2.10.C

Topics:	Skills:
<p>Materials: structure and uses</p>	<p>Know that atoms are composed of even smaller sub-atomic structures whose properties are measurable</p> <p>Explain the repeating pattern of chemical properties by using the repeating patterns of atomic structure within the periodic table</p> <p>Describe phases of matter according to the Kinetic Molecular Theory</p> <p>Explain the formation of compounds and their resulting properties using bonding theories (ionic and covalent)</p> <p>Recognize formulas for simple inorganic compounds</p> <p>Apply knowledge of mixtures to appropriate separation techniques</p> <p>Understand that carbon can form several types of compounds</p>
Activities:	Performance Assessments:
<p>Chemical equation practice</p> <p>Classifying metals and nonmetals</p> <p>Reactivity of metals laboratory</p> <p>Activity: chemical in your life: daily discussion Item</p> <p>Chemical name :[]</p> <p>Complete attached: "Chemical in Your Life" data sheet</p> <p>Post 1980's penny laboratory</p> <p>Separation of a compound laboratory</p>	<p>Teacher observations</p> <p>Laboratory performance</p> <p>Quizzes</p> <p>Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Technological Devices

Grade Level: GRADES
10-12

PA Standard: 3.7.10.A
3.7.10.B

Topics:	Skills:
<p>Materials: structure and uses</p>	<p>Identify and safely use a variety of tools, basic machines, materials and techniques to solve problems and answer questions Select and safely apply appropriate tools, materials and processes necessary to solve complex problems Apply advanced tool and equipment manipulation techniques to solve problems Apply appropriate instruments and apparatus to examine a variety of objects and processes Describe and use appropriate instruments to gather and analyze data Compare and contrast different scientific measurement systems; select the best measurement system for a specific situation Explain the need to estimate measurements within error of various instruments Apply accurate measurement knowledge to solve everyday problems</p>
Activities:	Performance Assessments:
<p>All laboratory investigations Activity: chemical in your life : daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet Mining of different metals discussion</p>	<p>Teacher observations Laboratory performance Quizzes Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Renewable and
Nonrenewable Resources

Grade Level: GRADES
10-12

PA Standard: 4.2.10.A

Topics: Materials: structure and uses	Skills: Explain that renewable and nonrenewable resources supply energy and materials Identify alternative sources of energy Identify and compare fuels used in industrial and agricultural societies
Activities: Mining of different types of metals discussion Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet Discussion of fuel types and an investigation of how they are obtained Review of the hydrologic cycle	Performance Assessments: Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Unifying Themes

Grade Level: GRADES
10-12

PA Standard: 3.1.10.C
3.1.10.E

Topics:	Skills:
<p>Petroleum/Air: chemistry and the atmosphere</p>	<p>Examine and describe recurring patterns that form the basis of biological classification, chemical periodicity, geological order and astronomical order. Describe how fundamental science and technology concepts are used to solve practical problems Recognize that stable systems often involve underlying dynamic changes</p>
Activities:	Performance Assessments:
<p>Endothermic and exothermic reactions Acid rain and its effect Electromagnetic waves Activity: chemical in your life : daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet Making acid rain laboratory</p>	<p>Teacher observations Laboratory performance Quizzes Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Inquiry and Design

Grade Level: GRADES
10-12

PA Standard: 3.2.10.B
3.2.10.C

Topics:	Skills:
<p>Petroleum/Air: chemistry and the atmosphere</p>	<p>Describe materials using precise quantitative and qualitative skills based on observations Use process skills to make inferences and predictions using collected information and to communicate using space/time relationships, defining operationally Generate questions about objects, organisms and/or events that can be answered through scientific investigations Evaluate the appropriateness of questions Design an investigation with adequate control and limited variable to investigate a question Conduct a simple experiment</p>
Activities:	Performance Assessments:
<p>CO₂ gas laboratory Making acid rain laboratory Buffer investigation Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet Endothermic and exothermic laboratory</p>	<p>Teacher observations Laboratory performance Quizzes Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Physical Science, Chemistry
and Physics

Grade Level: GRADES
10-12

PA Standard: 3.4.10.A

Topics:	Skills:
Petroleum/Air: chemistry and the atmosphere	Know that atoms are composed of even smaller sub-atomic structures whose properties are measurable Describe phases of matter according to the Kinetic Molecular Theory Describe various types of chemical reactions by applying the laws of conservation of mass and energy
Activities:	Performance Assessments:
Acid rain investigation CO ₂ investigation Gas laws Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet Properties of gases Electromagnetic waves	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Technological Devices

Grade Level: GRADES
10-12

PA Standard: 3.7.10.B

Topics:	Skills:
Petroleum/Air: chemistry and the atmosphere	Describe and use appropriate instruments to gather and analyze data
Activities:	Performance Assessments:
Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet All laboratory investigations	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Renewable and
Nonrenewable Resources

Grade Level: GRADES
10-12

PA Standard: 4.2.10.A
4.2.10.B

Topics:	Skills:
Petroleum/Air: chemistry and the atmosphere	Identify alternative sources of energy Identify and compare fuels used in industrial and agricultural societies Describe natural occurrences that may affect the natural resources Analyze technologies that affect the use of our natural resources Evaluate the effect of consumer desires on various natural resources
Activities:	Performance Assessments:
Petroleum and its availability investigation Renewable resources discussion Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet Effect of petroleum combustion on the atmosphere	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Unifying Themes

Grade Level: GRADES
10-12

PA Standard: 3.1.10.C
3.1.10.D
3.1.10.E

Topics:	Skills:
Air: chemistry and the atmosphere	Examine and describe stationary physical patterns Convert from one scale to another Describe how fundamental science and technology concepts are used to solve practical problems Recognize that stable systems often involve underlying dynamic changes Describe changes to matter caused by heat, cold, light or chemicals using a rate function
Activities:	Performance Assessments:
Gas properties station lab Temperature vs. volume lab Bottle / Egg demonstration Structure of the atmosphere graph Radiation and sun tanning dangers CO ₂ gas in liquid Lab (disappearing blue) Boil Water at room temperature demonstration Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet pH discussion and investigation	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Inquiry and Design

Grade Level: GRADES
10-12

PA Standard: 3.2.10.B
3.2.10.C

Topics:	Skills:
<p>Air: chemistry and the atmosphere</p>	<p>Develop appropriate scientific experiments: raising questions, formulating hypothesis, testing, controlled experiments, recognizing variables, manipulating variables, interpreting data, and producing solutions</p> <p>Use process skills to make inferences and predictions using collected information and to communicate using space/time relationships, defining operationally</p> <p>Conduct a multiple step experiment</p>
Activities:	Performance Assessments:
<p>Specific heat / calorimeter lab CO₂ in exhaled air lab CO₂ gas in liquid lab (disappearing blue lab) Cloud in a bottle CO₂ levels in the atmosphere discuss pH discuss and investigation Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet</p>	<p>Teacher observations Laboratory performance Quizzes Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Physical Science, Chemistry
and Physics

Grade Level: GRADES
10-12

PA Standard: 3.4.10.A
3.4.10.B

Topics:	Skills:
Air: chemistry and the atmosphere	Predict the behavior of gases through the use of Boyle's, Charles', or the ideal gas law, in everyday situations Describe the phases of matter according to the Kinetic Molecular Theory Use knowledge of conservation of energy and momentum to explain common phenomena
Activities:	Performance Assessments:
Gas Properties stations lab Temperature vs. volume lab Egg in bottle demonstration Cloud in a bottle lab Boil water at room temperature demonstration Specific heat / calorimeter lab Activity: chemical in your life: daily discussion Item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Science, Technology and
Human Endeavors

Grade Level: GRADES
10-12

PA Standard: 3.8.10.A

Topics:	Skills:
Air: chemistry and the atmosphere	Identify past and current tradeoffs between increased production, environmental harm and social values Describe and evaluate social change as a result of technological developments
Activities:	Performance Assessments:
CO ₂ gas in exhaled air lab Acid rain discussion and demonstration Radiation and sun tanning dangers Air pollution discussion pH discussion and lab Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Watershed and Wetlands

Grade Level: GRADES
10-12

PA Standard: 4.1.10.E

Topics:	Skills:
Air: chemistry and the atmosphere	Identify the effects of humans and human events on watersheds
Activities:	Performance Assessments:
CO ₂ Levels in the atmosphere discussion Cloud in a bottle lab Acid rain discussion Air pollution discussion pH discussion and lab Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Environmental Health

Grade Level: GRADES
10-12

PA Standard: 4.3.10.B

Topics:	Skills:
Air: chemistry and the atmosphere	Explain how human practices affect the quality of water and soil Analyze data and explain how point source pollution can be detected and eliminated
Activities:	Performance Assessments:
Structure of the atmosphere – graphing Acid rain discussion Air pollution discussion Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: “Chemical in Your Life” data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Inquiry and Design

Grade Level: GRADES
10-12

PA Standard: 3.2.10.C

Topics:	Skills:
Industry: applying chemical reactions	Conduct a multiple step experiment
Activities:	Performance Assessments:
Flame tests Electrochemistry demonstration and labs Nitrogen as fertilizer discussion and labs Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Physical Science, Chemistry
and Physics

Grade Level: GRADES
10-12

PA Standard: 3.4.10.A
3.4.10.B

Topics:	Skills:
Industry: applying chemical reactions	Explain the formation of compounds and their resulting properties using bonding theories Recognize formulas for simple inorganic compounds Use knowledge of chemical reactions to generate an electrical circuit Explain resistance, current and electro-motive force
Activities:	Performance Assessments:
Nitrogen as fertilizer discussion and lab Battery discussion Construction of various voltaic cells Electrochemistry demonstration Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Science, Technology and
Human Endeavors

Grade Level: GRADES
10-12

PA Standard: 3.8.10.A

Topics:	Skills:
Industry: applying chemical reactions	Identify past and current tradeoffs between increased production, environmental harm and social values
Activities:	Performance Assessments:
Nitrogen as fertilizer discussion and lab Phosphates and pollution discussion Battery discussion Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Environmental Health

Grade Level: GRADES
10-12

PA Standard: 4.3.10.A

Topics:	Skills:
Industry: applying chemical reactions	Explain the costs and benefits of cleaning up contaminants
Activities:	Performance Assessments:
Phosphates discussion Battery discussion Activity: chemical in your life: daily discussion tem Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Unifying Themes

Grade Level: GRADES
10-12

PA Standard: 3.1.10.C
3.1.10.E

Topics:	Skills:
<p>Atoms: nuclear interactions</p>	<p>Examine and describe recurring patterns that form the basis of biological classification, chemical periodicity, geological order and astronomical order Describe how fundamental science and technology concepts are used to solve practical problems Recognize that stable systems often involve underlying dynamic changes</p>
Activities:	Performance Assessments:
<p>X-Ray discussion Parts and charges of atoms / discussion and investigations Nuclear reactors discussion Domino effect lab Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet</p>	<p>Teacher observations Laboratory performance Quizzes Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Inquiry and Design

Grade Level: GRADES
10-12

PA Standard: 3.2.10.C

Topics:	Skills:
Atoms: nuclear interactions	Conduct a multiple step experiment
Activities:	Performance Assessments:
Photographic paper discussion and lab Domino effect lab Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Physical Science, Chemistry
and Physics

Grade Level: GRADES
10-12

PA Standard: 3.4.10.A
3.4.10.B

Topics:	Skills:
<p>Atoms: nuclear interactions</p>	<p>Know that atoms are composed of even smaller sub-atomic structures whose properties are measurable Use knowledge of chemical reactions to generate an electrical current Evaluate energy changes in chemical reactions Use knowledge of conservation of energy and momentum to explain common phenomena</p>
Activities:	Performance Assessments:
<p>Parts and charges of atoms discussion and investigation Nuclear reactors X-Ray discussion Radioisotopes in medicine investigation Nuclear accident activity Annual radiation test Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet</p>	<p>Teacher observations Laboratory performance Quizzes Tests</p>

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Earth Science

Grade Level: GRADES
10-12

PA Standard: 3.5.10.A

Topics:	Skills:
Atoms: nuclear interactions	Explain several methods of dating earth material and structures
Activities:	Performance Assessments:
Carbon dating discussion / $\frac{1}{2}$ Life investigation Radioisotopes in medicine investigation Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Science, Technology and
Human Endeavors

Grade Level: GRADES
10-12

PA Standard: 3.8.10.A

Topics:	Skills:
Atoms: nuclear reactions	Identify past and current tradeoffs between increased production, environmental harm and social values
Activities:	Performance Assessments:
Nuclear accident activity Nuclear waste discussion Three Mile Island video Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet Project: pamphlet on benefits of nuclear power	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Humans and the
Environment

Grade Level: GRADES
10-12

PA Standard: 4.8.10.C

Topics:	Skills:
Atoms: nuclear reactions	Analyze and evaluate changes in the environment that are the result of human activities Compare and contrast the environmental effects of different industrial strategies
Activities:	Performance Assessments:
Nuclear reactors discussion Domino effect lab Three Mile Island Video Nuclear waste investigation Nuclear accident activity Project: pamphlet about benefits of nuclear reactions Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Unifying Themes

Grade Level: GRADES
10-12

PA Standard: 3.1.10.B

Topics:	Skills:
Food: matter and energy for life	Examine the advantages of using models to demonstrate processes and outcomes
Activities:	Performance Assessments:
Chromatography lab Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Biological Sciences

Grade Level: GRADES
10-12

PA Standard: 3.3.10.B

Topics: Food: matter and energy for life	Skills: Describe the relationship between the structure of organic molecules and the function they serve in living organisms Explain cell functions and processes in terms of chemical reactions and energy changes
Activities: Artificial sweeteners investigation Food additives investigation Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Performance Assessments: Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Course: Chemistry in the Community
(ChemCom)

Unit: Physical Science, Chemistry
and Physics

Grade Level: GRADES
10-12

PA Standard: 3.4.10.A

Topics:	Skills:
Food: matter and energy for life	Know that atoms are composed of even smaller sub-atomic structures whose properties are measurable Apply knowledge of mixtures to appropriate separation techniques
Activities:	Performance Assessments:
Chromatography lab Artificial sweeteners investigation Food additives investigation Activity: chemical in your life: daily discussion item Chemical name :[] Complete attached: "Chemical in Your Life" data sheet	Teacher observations Laboratory performance Quizzes Tests

Wallenpaupack Area School District

Activity: Chemical in Your Life: Daily Discussion Item

Chemical name: { _____ }: "Chemical in Your Life" data sheet

Chemical Name: _____.

Alternate Chemical Name: _____

Molecular Formula: _____

Molecular Weight: _____

Percent Composition: _____

Structure:

MP / BP/ Flammability: _____

Solubility: _____

Toxicity: _____

LD/50 : _____

Organic / Inorganic: _____

Appearance at Room Temperature: _____

Physical Properties: _____

Chemical Properties: _____

Footnotes:

Wallenpaupack Area School District

Activity: Chemical in Your Life: Daily Discussion Item

Chemical name: { _____ } : "Chemical in Your Life" data sheet

Chemical Name: _____.

Alternate Chemical Name: _____

Molecular Formula: _____

Molecular Weight: _____

Percent Composition: _____

Structure:

MP / BP/ Flammability: _____

Solubility: _____

Toxicity: _____

LD/50 : _____

Organic / Inorganic: _____

Appearance at Room Temperature: _____

Physical Properties: _____

Chemical Properties: _____

Footnotes:

List of "Chemical in Your Life": suggestions;

Aluminum metal, alloys and compounds

Hydrogen Sulfide

Propane

Propylene Glycol

Shampoos , Ph balanced

Bleach

Ammonia, Ammonium water, ammonium hydroxide

peroxide

Sodium Hydroxide

Sulfuric Acid

Hydrochloric Acid

Nitric Acid

Concrete

Ethyl Alcohol

Sulfites and sulfates

Acetone

Street Drugs

Octane

Water

Sodium Nitrite

Caffeine

Sodium Benzoate

MSG

Wallenpaupack Area School District

Colors and dyes

Sugars

Quick Joe, Calcium Carbonate

Food Labels contents

Carbon

Ascorbic Acid

Iron- steel

Calcium Carbide

Hydrogen

Seborgium 3 106

Isopropyl Alcohol

1. Methane